

Notice of Allowability

Application No.

10/800,607

Examiner

Leo Boutsikaris

Applicant(s)

TSUKAGOSHI, TAKUYA

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendmenet filed on 9/21/06.
2. ☒ The allowed claim(s) is/are 1-5,8 and 9.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

LEONIDAS BOUTSIKARIS
PRIMARY EXAMINER

Leo Boutsikaris, Ph.D., Esq.
Primary Patent Examiner, AU 2872
12/14/2006

DETAILED ACTION

Allowable Subject Matter

Claims 1-5, 8-9 are allowed.

Claims 1-5, 8-9 are allowable over the prior art of record for at least the reason that even though the prior art discloses holographic recording and reproducing methods wherein a servo beam is used along with the recording beams to provide synchronization, and wherein the two recording beams are either collinear as they are incident onto the holographic recording medium, or they follow different optical paths, with the servo beam being projected along the same optical path as the information recording beam, the prior art fails to teach or reasonably suggest, regarding claims 1-3, 8, a holographic recording and reproducing method for recording and reproducing holographic data, wherein during recording, the signal beam is projected along a first optical path and the reference and the light beam for servo control are projected along a second optical path different than the first optical path, regarding claims 4-5, a holographic reproducing method for reproducing holographic data from a holographic recording medium comprising a recording layer in which data and a test pattern for obtaining noise information are to be recorded as phase information, comprising reproducing an image recorded in the holographic recording medium, and removing noise components due to the optical modulation pattern from the reproduced image, and recording claim 9, a holographic reproducing method for reproducing holographic data from a holographic recording medium comprising a recording layer in which a test pattern for obtaining noise information is recorded as phase information,

Art Unit: 2872

comprising reproducing the test pattern to obtain noise information due to an optical modulation pattern, calculating a difference between the noise information and the reproduced image and removing noise components from the reproduced image, as set forth by the claimed combination.

In Horimai's system, the signal and the reference beam (as well as the servo beam) are projected along the same optical path. In the field of optics it has been custom usage to refer to the term "optical path" of an optical beam as the "optical axis" of the optical beam, i.e., the direction along which the light energy propagates. Horimai states specifically that "the optical axes of the information light and the reference light for recording are located on the same line", see [0148] and Figs. 7 and 8. Both beams 51, 52 are projected along the same direction as they pass through the same elements 14 and 12.

Regarding Amble's system, it must be noted that optical beams 100A and 110B (see Fig. 3F) are *not* the recording beams, since said beams are used exclusively to form a format hologram 107, and nothing more. The data is recorded by a *single* beam 102 (see Fig. 3G), which is focused on different locations of the format hologram 107 to create localized variations of the refractive index, representing data bits ([0065]-[0066]).

Curtis (US 6,909,529, Figs. 11-12) discloses a holographic recording and reproduction system, wherein a servo beam 240 is projected along the same optical path as the object beam 142, which is different than the optical path of the reference beam 140b (lines 45-50, col. 14).

Furuya (JP 2002-063733) discloses a holographic recording and reproduction system, wherein the signal beam 305 and reference beam 304 are projected along different optical paths (see Fig. 3), with a servo beam emitted by laser 404 being propagated along the same optical

Art Unit: 2872

path as the signal beam (see Fig. 4, and [0031]-[0032]). See also Fig. 10, where the servo beam and the signal beam are co-linear (arriving from the bottom of the holographic recording medium 1002).

Ogasawara (US 7,031,038, Fig. 2) discloses a holographic recording and reproduction system, wherein the problem of noise/aberrations in the reproduced image is addressed and solved by incorporating a distortion corrector plate 50 in the path of the reproduced image beam (Figs. 2, 7).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Leo Boutsikaris whose telephone number is 571-272-2308. The examiner can normally be reached on M-F, 10-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

Application/Control Number: 10/800,607

Page 5

Art Unit: 2872

like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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